

Vibration: A bibliometric analysis

João Paulo Davim

Department of Mechanical Engineering, University of Aveiro, Campus Santiago, 3810-193 Aveiro, Portugal; pdavim@ua.pt

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Abstract: Vibration is a mechanical phenomenon in which oscillations occur around an equilibrium point. The Scopus database was used for the bibliometric analysis, based on the term {vibration}. The better result shows in the function of the number of documents produced: year 2024; source Proceedings of SPIE; author Inman, D.J.; affiliation Ministry of Education of China; country China; document type article; scientific area Engineering and funding support National Natural Science Foundation of China.

Keywords: vibration; dynamic measurements; structural analysis; machining dynamics

Vibrations occur in machine elements and structures when subjected to dynamic actions. As for excitation, vibrations can be free or forced, damped or undamped. Vibrations can also be classified as deterministic or random, as well as linear or non-linear. Machining vibrations are common in subtractive processes [1–4].

The bibliometric analysis used the database Scopus/Elsevier to search for the documents. Using the term {vibration}, TITLE-ABS-KEY ({vibration}), 541,982 documents were identified (a search carried out on 20 January 2025).

The results obtained in documents can be seen in **Table 1**, for the first ten positions concerning year, source, author, affiliation, country, document type, scientific area, and funding support. The better results obtained show in function of the number of documents produced: year 2024 (31,704), followed by the years 2023 (28,921) and 2022 (28,262); source *Proceedings of SPIE*—The International Society For Optical Engineering (10,747) followed by *Journal of Sound and Vibration*—Elsevier (9362) and *Zhendong yu Chongji/Journal of Vibration and Shock*—Chinese Vibration Engineering Society (6630); author Inman, D.J.—Michigan Engineering, Ann Arbor (356), followed by Meng, G.—Shanghai Jiao Tong University (327) and Choi, S.B.—Trường Đại học Công nghiệp thành phố Hồ Chí Minh (323); affiliation Ministry of Education of China (11,694) followed by Chinese Academy of Sciences (7097) and Harbin Institute of Technology (6153); country China (167,979) followed by USA (83,715) and Japan (37,828); document type Article (367,826) followed by Conference Paper (170,070) and Review (8186); scientific area Engineering (350,457) followed by Physics and Astronomy (162,755) and Materials Science (106,083) and funding support National Natural Science Foundation of China (53,496) followed by Ministry of Science and Technology of China (15,779) and Fundamental Research Funds for the Central Universities (7367).

Table 1. Documents (541,982) by (source Scopus/Elsevier, 20 January 2025).

Year	Source	Author	Affiliation
1 2024 (31,704)	Proceedings of SPIE (10,747)	Inman, D.J. (356)	Ministry of Education of China (11,694)
2 2023 (28,921)	Journal of Sound and Vibration (9362)	Meng, G. (327)	Chinese Academy of Sciences (7097)
3 2022 (28,262)	Zhendong Yu Chongji/Journal of Vibration and Shock (6630)	Choi, S.B. (323)	Harbin Institute of Technology (6153)
4 2021 (26,021)	SAE Technical Papers (5063)	Griffin, M.J. (311)	Shanghai Jiao Tong University (5290)
5 2019 (24,623)	Journal of Chemical Physics (4819)	Chen, L.Q. (310)	Tongji University (5158)
6 2020 (24,373)	Applied Mechanics and Materials (4255)	Chen, X. (304)	Southwest Jiaotong University (4864)
7 2018 (22,584)	Journal of Physics Conference Series (4227)	Wen, B. (301)	Xi'an Jiaotong University (4510)
8 2017 (21,310)	Mechanical Systems and Signal Processing (3957)	Ding, H. (297)	Tsinghua University (4296)
9 2016 (19,586)	Advanced Materials Research (3577)	Gu, F. (284)	Nanjing University of Aeronautics and Astronautics (4172)
10 2014 (19,362)	Journal of the Acoustical Society of America (3187)	Tounsi, A. (278)	CNRS Centre National de la Recherche Scientifique (4083)

Country	Type	Area	Funding Support
1 China (167,979)	Article (367,826)	Engineering (350,457)	National Natural Science Foundation of China (53,496)
2 USA (83,715)	Conference Paper (150,070)	Physics and Astronomy (162,755)	Ministry of Science and Technology of China (15,779)
3 Japan (37,828)	Review (8186)	Materials Science (106,083)	Fundamental Research Funds for the Central Universities (7367)
4 India (24,953)	Book Chapter (5106)	Computer Science (76,218)	National Key Research and Development Program of China (6972)
5 UK (24,322)	Conference Review (4613)	Mathematics (57,323)	National Science Foundation (6425)
6 Germany (21,566)	Letter (1365)	Chemistry (51,724)	Japan Society for the Promotion of Science (4507)
7 France (15,367)	Note (1247)	Medicine (29,640)	China Postdoctoral Science Foundation (3748)
8 Italy (14,571)	Editorial (816)	Earth and Planetary Sciences (27,853)	European Commission (3570)
9 South Korea (13,975)	Short Survey (740)	Energy (27,322)	Ministry of Education of China (3109)
10 Russia Fed. (13,942)	Book (703)	Chemical Engineering (25,658)	Ministry of Education, Culture, Sports, Science and Technology (2724)

Conflict of interest: The author declares no conflict of interest.

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